

USAF ETAC TN 70-3

# ENVIRONMENTAL *Technical Applications Center*

AD 702463

ETAC

TECHNICAL NOTE  
70-3

## LISTING OF AVAILABLE SEMINARS (AWS WINGS)

MARCH 1970



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USAF

BUILDING 159  
NAVY YARD ANNEX  
WASHINGTON, D.C. 20333

Approved for  
CLEARANCE  
by the Department of Defense  
on 10/10/70

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LISTING OF AVAILABLE SEMINARS  
(AWS Wings)

General. This Technical Note is issued to provide AWS units with a listing of prepared seminars that are available at AWS wing level for loan to other interested units. This listing should preclude duplication of effort in the preparation of many seminars within the AWS. It will be revised annually, as of 1 February, by the Information & Publication Branch (IPB) of the USAF Environmental Technical Applications Center (ETAC).

Prepared Seminars. Prepared seminars are an integral part of the indoctrination and training program within the Air Weather Service. Certain phases of the in-station training at all AWS units can best be conducted by the judicious use of standard presentations of the many pertinent subjects concerning meteorological techniques, theories, and procedures. These presentations (seminars) may be prepared at all levels of the Air Weather Service. Detachment-prepared seminars generally are concerned with subjects and methods applicable to the local operation. Those prepared at wing level may be directed towards subjects that encompass a broader application and, therefore, are applicable to several or all of their detachments. In many cases seminars prepared for use by one unit are applicable to another detachment, another wing, or may have general value to all AWS units.

Reporting Available Seminars. The list of seminars required by paragraph 2k, AWSR 80-2 will be sent to the Information & Publication Branch of the USAF Environmental Technical Applications Center, Building 159, Navy Yard Annex, Washington, D. C. 20333.

Availability of Seminars. Units desiring seminars listed in this index for use in their unit training should make the request, through channels, to their parent wing. All requests should provide for sufficient lead-time to allow efficient scheduling by the wing holding the requested seminar. In many cases only one copy of the seminar is available and requests, when possible, should include alternate dates when the seminar could be used. Prompt return of the seminar after its use is mandatory to allow effective operation of the "loan" system.

Index of Seminars. USAF ETAC will prepare and update each year, as of 1 February, a complete listing of all seminars, by wing, available for loan to other units. This index will contain the following information, when available:

1. The mailing address of the wing archiving the seminar.
2. The subject, author, and date of the seminar.

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3. Number of copies available for loan.
4. The normal period of loan.
5. A synopsis of the seminar, including the type and number of slides (if applicable).
6. Approximate presentation time.
7. Alternate sources of the seminar (if located at more than one headquarters).
8. Remarks - any explanatory notes which affect the loan, presentation, or limitations of the seminar.

Annual reports of seminars from the wings, required by AWSR 80-2, should include all information listed above to allow the revised list to show complete information on each seminar.

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1ST WEATHER WING  
APO SAN FRANCISCO  
96553

- |                            |                      |
|----------------------------|----------------------|
| 1. Earthquakes and Tsunami | <u>No. of Copies</u> |
| by                         |                      |
| Lee J. Dickinson, Capt.    | (one)                |
| Evert A. Schmidt, Capt.    |                      |

Synopsis:

This seminar discusses the nature of earthquakes and formation of Tsunami. It describes the various types of instruments used in earthquake detection and earthquake intensity recording.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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- |   |                      |
|---|----------------------|
| 2. Revised Uniform Summary of Surface Weather | <u>No. of Copies</u> |
| Observations                                  |                      |
| by  | (one)                |
| Gary D. Atkinson, Capt.                       |                      |

Synopsis:

This seminar provides a brief history and background information on the uniform summaries and discusses the format and information contained in the summaries. It gives a brief review of the different types of frequency distributions associated with meteorological parameters and discusses the use of the summaries to answer specific questions.

Period of Loan: 30 days

Presentation Time (approx): 50 minutes

Remarks: NONE

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- |  |                      |
|--|----------------------|
| 3. Discussion of Tropical Storms and How APT | <u>No. of Copies</u> |
| Can Aid in Observation                       |                      |
| by   | (one)                |
| William M. Gray, Capt. (USAF Res)            |                      |

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## Synopsis:

This seminar discusses the climatological - physical conditions necessary for tropical storm development and the cloud patterns associated with the early stages of storm development. It briefly reviews the efforts made in tropical storm research at the National Meteorological Satellite Laboratory.

Period of Loan: 30 days

Presentation Time (approx): 50 minutes

Remarks: A more comprehensive study on the origin of tropical disturbances and storms by the author was published in the October 1968 issue of the Monthly Weather Review.

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4. Weather Effects on Flooding in the  
Red River Delta

by  
Clarence M. Duff, Major

No. of Copies

(one)

## Synopsis:

This seminar presents a review of the topography of the Red River Delta region and discusses the factors contributing to natural flooding.

Period of Loan: 30 days

Presentation Time (approx): unk

Remarks: This paper was originally prepared for the staff engineer at USARPAC.

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5. Satellite Meteorology

by  
William M. Osburn, MSgt

No. of Copies

(one)

## Synopsis:

This seminar gives a brief history of satellite meteorology and some examples of picture interpretation (40 slides).

Period of Loan: 30 days

Presentation Time: 50 minutes

Remarks: NONE

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|  |                                   |
|--|-----------------------------------|
| 6. Asian Weather Central Organization and<br>Activities<br>by<br>Wayne S. Bullock, Major | <u>No. of Copies</u><br><br>(one) |
|--|-----------------------------------|

Synopsis:

This seminar presents organization and activities of the Asian Weather Central, Fuchu Air Station, Japan. The preparation of facsimile products and their transmission is discussed (59 slides).

Period of Loan: 30 days

Presentation Time: 30 minutes

Remarks: NONE

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|   |                                   |
|---|-----------------------------------|
| 7. Streamline and Cloud Climatology for<br>Western Pacific<br>by<br>Thomas C. Wann, Capt. | <u>No. of Copies</u><br><br>(one) |
|---|-----------------------------------|

Synopsis:

This seminar correlates September to January streamline and satellite climatology for the western Pacific. The movement of major features are discussed with respect to the mean cloudiness (30 slides).

Period of Loan: 30 days

Presentation Time: 20 minutes

Remarks: NONE

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|  |                                   |
|--|-----------------------------------|
| 8. Clear Air Turbulence<br>by<br>Stanton R. Withrow, LtCol | <u>No. of Copies</u><br><br>(one) |
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Synopsis:

This seminar discusses the physics of CAT, details of the NCAT program, remote detection, and forecasting.

Period of Loan: 30 days

Presentation Time: 90 minutes

Remarks: NONE

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2D WEATHER WING  
APO NEW YORK  
09332

- |  |                                   |
|--|-----------------------------------|
| 1. Major Terrain Features of Europe<br>by<br>Douglas B. Cargill, Capt. | <u>No. of Copies</u><br><br>(one) |
|--|-----------------------------------|

Synopsis:

This seminar furnishes a good breakdown of the major terrain features of Europe. It is designed to be used in connection with the European Theater Weather Orientation Packet available at 2 Wea Wg units. Seven 35mm color slides are included in the seminar that discusses what effects that terrain has on large-scale weather patterns, summer and winter precipitation patterns, and comments on a few of the small-scale weather patterns.

Period of Loan: (30 days)

Presentation Time (approx): unk

Remarks: This seminar could easily be reproduced and distributed to other interested units.

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- |  |                                   |
|--|-----------------------------------|
| 2. Vorticity Applications Reference Kit<br>(compilation) | <u>No. of Copies</u><br><br>(one) |
|--|-----------------------------------|

Synopsis:

This reference kit contains several articles that discuss vorticity and its application. It is a very complete kit because it contains articles that can be understood by the newly assigned as well as the most experienced forecasters.

Period of Loan: (30 days)

Presentation Time (approx): unk

Remarks: This kit could be reproduced, if necessary, for distribution to other units. The only drawback for reproduction is its length.

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- |   |                                   |
|---|-----------------------------------|
| 3. Climatology of Southeast Asia<br>(no author given) | <u>No. of Copies</u><br><br>(one) |
|---|-----------------------------------|

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Synopsis:

This is a seminar on the weather and topography of North Vietnam, South Vietnam, Laos, Cambodia, and Thailand. Twenty-two 35mm color slides are used with the briefing that discusses topography, monsoon weather, the general flow of the area, typhoon and thunderstorm activity, precipitation, temperature distribution, and other facets of the weather in Southeast Asia.

Period of Loan: (30 days)

Presentation Time (approx): unk

Remarks: The seminar can be reproduced quite easily and could be made available to other interested units.

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4. Series of Computer Seminars  
(no author given)

No. of Copies

(one)

Synopsis:

These seminars were given at 2 Wea Wg in past years to fulfill proficiency training requirements. They cover the Binary number system, computer hardware, the role of computers in meteorology, flow charting, and why a computer is used.

Period of Loan: (30 days)

Presentation Time (approx): variable

Remarks: These seminars can easily be reproduced and distributed to other interested units.

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5. The Sun and Solar Activity  
by

A. R. Crist, Lt Colonel

No. of Copies

one

Synopsis:

This seminar was developed for presentation at an AMS meeting. It consists of information obtained from nine different books or pamphlets on the subject.

Period of Loan: 30 days

Presentation Time (approx): unk

Remarks: It can be reproduced and distributed to other interested units

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|---|---------------------------------|
| 6. Cyclones and Anticyclones in Europe<br>by<br>2WW Aerospace Sciences Division | <u>No. of Copies</u><br><br>one |
|---|---------------------------------|

**Synopsis:**

This seminar was prepared in October 1969 for use by 2WW units. This seminar on cyclones and anticyclones in Europe will discuss a number of aspects including the history of storm tracks, factors affecting movement, genesis, strength, and location of storm tracks and pressure systems. Thirty-four slides are included with the seminar to depict, by season, paths of pressure systems and their areas of genesis. Also, the role of upper-air circulation and its effects on movement and genesis of pressure systems will be discussed.

Period of Loan: (30 days)

Presentation Time (approx): unk

Remarks: This seminar could be reproduced quite easily for distribution to other units.

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|   |                                 |
|---|---------------------------------|
| 7. An Interim Approach to Terminal<br>Forecasting (Kit)<br>by<br>Robert D. Johnston, Colonel<br>(28 Wea Sq) | <u>No. of Copies</u><br><br>two |
|---|---------------------------------|

**Synopsis:**

This kit consists of 10 35mm slides and a text on the present state of the art in the forecasting profession and the impact of this on terminal forecasting as practiced by AWS field units. This seminar is especially useful as a refresher course in terminal forecasting.

Period of Loan: (30 days)

Presentation Time (approx): unk

Remarks: This kit could be reproduced for distribution but is quite lengthy.

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|  |                                 |
|--|---------------------------------|
| 8. Objective Forecast Studies<br>(28 Wea Sq) | <u>No. of Copies</u><br><br>two |
|--|---------------------------------|

**Synopsis:**

This kit consists of 17 35mm slides with script and copies of numerous reports concerning forecast studies

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which together-furnish information for a wide variety of talks on forecasting studies.

Period of Loan: (30 days)

Presentation Time (approx): unk

Remarks: This kit can be reproduced for distribution but is quite lengthy.

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9. The following seminars originated by other AWS units are also in the Wing files and available for loan:
- a. Wind-Shear Turbulence (3WW #3)
  - b. Meteorological Analysis (3WW #4)
  - c. Coastal Stratus and Fog (4WW #9)
  - d. Appraisal and Modification of NMC Prognostic Charts (4WW #14)
  - e. The Circulation Patterns of the Stratosphere (4WW #1)
  - f. Weather Control and Modification (4WW #2)
  - g. A Practical Procedure for Forecasting Cloud Cover and Precipitation (4WW #5)
  - h. Environmental Satellites - Lecture Notes (4WW, not identifiable)
  - i. Lee Waves in the Atmosphere (4WW #13)
  - j. Clear Air Turbulence w/slides (4WW #17)
  - k. Atlantic Hurricanes (4WW #8)
  - l. A Simplified Discussion on Vorticity (4WW #3)
  - m. Forecasting Severe Local Storms (4WW #10)
  - n. The Use of Trajectories in Terminal Forecasting w/slides (4WW #23)
  - o. CAT w/slides (5WW #1)
  - p. Solar Flares as a Function of Sunspot Size (6WW, a report)
  - q. Meteorological Satellites (6WW #1)

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- r. General Briefing on Satellites w/slides (6WW/ETAC)
- s. Operation of the Military Weather Warning Center (7WW #8)
- t. A Series of Observer Technical Topics - 4 Parts (7WW #15, #19, #20, #21)
- u. Forecasting Severe Thunderstorms w/slides (7WW #6)
- v. The Tornado w/slides (7WW #9)
- w. Prediction of Snow vs Rain w/slides (7WW #2)
- x. Weather and Helicopter Operation (7WW #7)
- y. Characteristics of Jet Stream Flow in Middle Latitudes (7WW #3)
- z. Fundamentals of the Pressure Altimeter (7WW, no record)
- aa. The Air Weather Service (AWS)

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3D WEATHER WING  
OFFUTT AFB, NEBRASKA  
68113

|  |                             |
|--|-----------------------------|
| 1. Jet Aircraft Characteristics<br>(3WWP 105-3, 24 Jun 68) | <u>No. of Copies</u><br>one |
|--|-----------------------------|

## Synopsis:

This seminar describes flight characteristics of SAC aircraft for indoctrination of forecasters new to SAC operations. Manuscript only.

Period of Loan: 30 days

Presentation Time (approx): unk

Remarks: NONE

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|   |                             |
|---|-----------------------------|
| 2. Cirrus Clouds<br>(3WWP 105-5, 26 Jun 68) | <u>No. of Copies</u><br>one |
|---|-----------------------------|

## Synopsis:

Methods of forecasting and analyzing cirrus clouds and the effects upon SAC operations are presented in this seminar. Manuscript only.

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Period of Loan: 30 days

Presentation Time (approx): unk

Remarks: NONE

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|--|---------------------------------|
| 3. Wind-Shear Turbulence<br>(3WWP 105-7, 10 Nov 64)<br>by<br>Thomas E. Stanton, Capt | <u>No. of Copies</u><br><br>one |
|--|---------------------------------|

Synopsis:

This seminar acquaints forecasters with the locations and conditions of most frequent wind-shear clear-air turbulence. Manuscript only.

Period of Loan: 30 days

Presentation Time (approx): unk

Remarks: NONE

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|---|---------------------------------|
| 4. Meteorological Analysis<br>(3WWP 105-8, Apr 65)<br>by<br>Thomas B. Gray, Jr., Lt Colonel | <u>No. of Copies</u><br><br>one |
|---|---------------------------------|

Synopsis:

This seminar attempts to stimulate and improve meteorological analysis techniques. Manuscript only.

Period of Loan: 30 days

Presentation Time (approx): unk

Remarks: NONE

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4TH WEATHER WING  
ENT AFB, COLORADO  
80912

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|   |                                 |
|---|---------------------------------|
| 1. The Circulation Patterns of the Stratosphere<br>by<br>H. A. Million, Capt. | <u>No. of Copies</u><br><br>two |
|---|---------------------------------|

Synopsis:

A discussion of the annual change of the circulation at about 80,000 feet, with particular attention on The

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Polar Night Jet Stream, its behavior and its explosive decay and sudden warming. Includes 19 Vu-graph slides.

Period of Loan: 30 days

Presentation Time (approx): 1 hour

Remarks: NONE

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|   |                                 |
|---|---------------------------------|
| 2. Weather Control and Modification<br>by<br>RAND Corporation | <u>No. of Copies</u><br><br>two |
|---|---------------------------------|

Synopsis:

This is a condensed and simplified version of a RAND report on the status of weather control (as of 1963). A philosophical treatise on weather control and a logical approach on the future possibilities of success in the field of meteorology. Manuscript only.

Period of Loan: 30 days

Presentation Time (approx): 1 hour

Remarks: NONE

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|   |                                 |
|---|---------------------------------|
| 3. A Simplified Discussion of Vorticity<br>by<br>D. Werking, 1st Lt | <u>No. of Copies</u><br><br>two |
|---|---------------------------------|

Seminar:

This seminar explains vorticity in a simple and nonmathematical manner, then goes into a few applications to weather forecasting. A short mathematical discussion (similar to AWSM 105-50/1A) is appended. Manuscript only.

Period of Loan: 30 days

Presentation Time (approx): 1 hour

Remarks: A more comprehensive discussion on vorticity and its applications is contained in 4 Wea Wg Seminar No. 21 and 5 Wea Wg Seminar No. 2.

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|--|---------------------------------|
| 4. Winter Weather in the San Francisco<br>Air Defense Sector<br>by<br>Det 24, 4 Wea Sq | <u>No. of Copies</u><br><br>one |
|--|---------------------------------|

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Synopsis:

A very short discussion (5pp) on the synoptic climatology of winter weather systems affecting the west coast. Manuscript only.

Period of Loan: 30 days

Presentation Time (approx): 30 minutes

Remarks: NONE

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|  |                                 |
|--|---------------------------------|
| 5. A Practical Procedure for Forecasting<br>Cloud Cover and Precipitation<br>by<br>E. L. Tuttle, SMSgt | <u>No. of Copies</u><br><br>two |
|--|---------------------------------|

Synopsis:

This seminar was extracted from the February 1961 AMS Bulletin article, "Vorticity Concepts and Utilization of Central Weather Facility Products," by Capt J. P. Jenette. It develops procedures for deriving a maximum precipitable water field and a forecast saturation chart. These charts, together with the NMC vertical motion prognoses are used to delineate areas of cloud cover and precipitation. Manuscript only.

Period of Loan: 30 days

Presentation Time (approx): 30 minutes

Remarks: NONE

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|   |                                 |
|---|---------------------------------|
| 6. Ice Fog Conditions in the Alaskan Interior<br>by<br>E. R. Hoppe, Capt. | <u>No. of Copies</u><br><br>one |
|---|---------------------------------|

Synopsis:

This seminar discusses some of the patterns of formation and dissipation of ice fog at Eielson AFB during the 1961-1962 winter. This seminar was presented at the 203rd National Meeting of the American Meteorological Society at the University of Alaska. Includes 6 35mm slides.

Period of Loan: 30 days

Presentation Time (approx): 30 minutes

Remarks: NONE

|  |                      |
|--|----------------------|
| 7. Chart Integration in the 24-Hour Forecast | <u>No. of Copies</u> |
| by<br>H. H. Dunning, Major                   | one                  |

## Synopsis:

This seminar discusses the utilization of various meteorological charts in forecasting with emphasis on a particular type of chart called an "advection motion" chart — a modern substitute for the isentropic chart. Contains no visual aids but includes 20 illustrations in the manuscript.

Period of Loan: 30 days

Presentation Time (approx): 1 hour

Remarks: NONE

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|                             |                      |
|-----------------------------|----------------------|
| 8. Atlantic Hurricanes      | <u>No. of Copies</u> |
| by<br>Lt Walter S. Burgmann | two                  |

## Synopsis:

This seminar contains two parts. Part I covers hurricane climatology and warning systems (1965). Part II covers hurricane forecasting procedures. Manuscript only.

Period of Loan: 30 days

Presentation Time: 1 hour

Remarks: NONE

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|                            |                      |
|----------------------------|----------------------|
| 9. Coastal Stratus and Fog | <u>No. of Copies</u> |
| by<br>Det 9, 4 Wea Sq      | one                  |

## Synopsis:

This is a very short seminar (4pp) which reviews some forecasting procedures for west coast stratus and fog. Manuscript only.

Period of Loan: 30 days

Presentation Time (approx): 30 minutes

Remarks: NONE

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|                                     |                      |
|-------------------------------------|----------------------|
| 10. Forecasting Severe Local Storms | <u>No. of Copies</u> |
| by<br>F. D. Monson, 1st Lt          | one                  |

Synopsis:

This seminar describes forecasting procedures that were used by the AWS Severe Weather Warning Center with emphasis on those procedures which can be used in local storm forecasting at McChord AFB, Washington. Manuscript only.

Period of Loan: 30 days

Presentation Time (approx): 30 minutes

Remarks: This seminar was prepared prior to the publication of AWS TR 200, "Notes on Analysis and Severe-Storm Forecasting Procedures of the Military Weather Warning Center," 1967. Therefore, it is suggested that AWS TR 200 be reviewed before any future presentations of this seminar.

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|                             |                      |
|-----------------------------|----------------------|
| 11. Blizzard Forecasting    | <u>No. of Copies</u> |
| by<br>D. R. Bertelsen, MSgt | one                  |

Synopsis:

This seminar was extracted from a Canadian DOT study, "An Investigation into Means of Forecasting Blizzards on the Western Prairies," by D. Storr. It defines the blizzard forecast problem and discusses three separate synoptic types and forecasting notes. Includes 18 35mm slides.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|  |                      |
|--|----------------------|
| 12. Meteorological Satellites - Past,<br>Present, Future | <u>No. of Copies</u> |
| by<br>L. Hansrote, Capt.                                 | two                  |

Synopsis:

This seminar reviews various meteorological satellite systems (as of May 1963) from an operational standpoint. Systems discussed are TIROS, NIMBUS, and AEROS. Includes 21 35mm slides.



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Period of Loan: 30 days

Presentation Time (approx): 1 hour

Remarks: NONE

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|                                 |                      |
|---------------------------------|----------------------|
| 13. Lee Waves in the Atmosphere | <u>No. of Copies</u> |
| by                              |                      |
| D. E. Barbarick, Capt.          | one                  |

## Synopsis:

The physical factors which contribute to the development of atmospheric waves and wave clouds in the lee of mountains are discussed, with reference to early discoveries and recent accomplishments of glider pilots. Includes 18 35mm slides or vu-graph slides.

Period of Loan: 21 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|                                       |                      |
|---------------------------------------|----------------------|
| 14. Appraisal and Modification of NMC | <u>No. of Copies</u> |
| Prognostic Charts                     |                      |
| by                                    | --                   |
| J. S. Restivo                         |                      |

## Synopsis:

This seminar was published as 4 Wea Wg Technical Paper 64-8 and distributed to all 4 Wea Wg units and all AWS wings in August 1964. It contains a discussion on the utilization of plain language prognostic discussion bulletins (e.g., FX and FS bulletins) and illustrates a method of appraising NMC prognostic charts. Contains no visual aids.

Period of Loan: --

Presentation Time (approx): Variable, but at least 1 hour

Remarks: Although the illustrations in this paper pertain to the 1964 Facsimile Schedule, the general procedure still applies. Retention copies of 4WWTP 64-8 are available from 4V.

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|                           |                      |
|---------------------------|----------------------|
| 15. Anomalous Propagation | <u>No. of Copies</u> |
| by                        |                      |
| 32 Wea Sq                 | two                  |

Synopsis:

This is a Slide/Tape kit on basic radar principles and causes of AP. The kit contains a 40-minute tape (3-3/4 ips) and 20 35mm slides.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: All 4 Wea Wg squadrons have a copy of this slide/tape kit.

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|  |                      |
|--|----------------------|
| 16. Forecast Problems in the Pacific Northwest | <u>No. of Copies</u> |
| During the Spring Season                       |                      |
| by   | one                  |
| Lt J. R. Allen                                 |                      |

Synopsis:

This seminar contains a comprehensive discussion on forecast problems frequently encountered in the Pacific Northwest. Includes 9 35mm slides.

Period of Loan: 30 days

Presentation Time (approx): 30 minutes

Remarks: NONE

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|                          |                      |
|--------------------------|----------------------|
| 17. Clear Air Turbulence | <u>No. of Copies</u> |
| by                       |                      |
| Lt R. V. Christiansen    | two                  |

Synopsis:

This seminar discusses criteria and methods of forecasting areas of clear air turbulence. Includes 14 vu-graph slides and 35mm slides.

Period of Loan: 45 days

Presentation Time (approx): 1 hour

Remarks: NONE

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|                    |                      |
|--------------------|----------------------|
| 18. Tornadoes      | <u>No. of Copies</u> |
| by                 |                      |
| R. L. Hager, Capt. | two                  |

## Synopsis:

This seminar discusses the characteristics of tornadoes, favorable conditions for tornado formation, review of weather warning procedures, and climatological statistics (viz., tornado frequency, thunderstorm frequency, storm tracks). Includes 18 vu-graph slides.

Period of Loan: 30 days

Presentation Time (approx): 1 hour

Remarks: NONE

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|                            |                      |
|----------------------------|----------------------|
| 19. Vorticity Applications | <u>No. of Copies</u> |
| by                         |                      |
| USWB, Western Region       | one                  |

## Synopsis:

This is a Slide/Tape kit which discusses practical applications of vorticity charts through map illustrations of various situations in the western United States. Kit includes a 45-minute tape (3-3/4 ips) and 33 35mm slides.

Period of Loan: 21 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|                   |                      |
|-------------------|----------------------|
| 20. Jet Stream    | <u>No. of Copies</u> |
| by                |                      |
| L. Tunnell, Major | one                  |

## Synopsis:

This is a combination Slide/Tape/Text kit which includes a 45-minute tape, 27 35mm or vu-graph slides, and a typed script. It may be used as a standard seminar or may be used exclusively as a Slide/Tape seminar. This seminar discusses fundamental jet stream characteristics, and jet stream relationships with surface pressure systems.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

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Remarks: Requestors should indicate the combination of materials desired (i.e., 35mm vs. vu-graph and Slide/Tape/Text vs. Slide/Tape).

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|  |                                 |
|--|---------------------------------|
| 21. Techniques for the Use of Vorticity Charts<br>in Terminal Forecasting<br>by<br>Lt R. V. Christiansen | <u>No. of Copies</u><br><br>two |
|--|---------------------------------|

Synopsis:

This is a well-organized and comprehensive seminar which discusses the vorticity principle and several vorticity applications. It covers the use of vorticity charts in daily forecasting and relationships between vorticity advection, vertical motion, cloudiness, and precipitation. The kit includes a manuscript (50pp) and 18 vu-graph slides, or 35mm slides.

Period of Loan: 21 days

Presentation Time (approx): 1 hour

Remarks: NONE

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|  |                                |
|--|--------------------------------|
| 22. The Use of Trajectories in Terminal<br>Forecasting<br>by<br>AWS Aerospace Sciences | <u>No. of Copies</u><br><br>or |
|--|--------------------------------|

Synopsis:

This seminar describes the use of trajectory data and techniques in terminal forecasting as described in AWS TR 210. Includes a script and 34 35mm slides.

Period of Loan: 21 days

Presentation Time: unk

Remarks: Since this seminar follows the format of AWS TR 210, detachment personnel should review AWS TR 210 before the seminar is presented.

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|  |                                   |
|--|-----------------------------------|
| 23. Rain vs Snow Forecasting in the Eastern<br>United States<br>by<br>D. Varley, Capt. | <u>No. of Copies</u><br><br>(one) |
|--|-----------------------------------|

## Synopsis:

This seminar describes important aspects of the forecasting situation when both rain and snow have a nearly equal probability. Some rules for predicting the correct type of precipitation are also presented. Contains 12 vu-graph or 35mm slides and a script.

Period of Loan: 21 days

Presentation Time: 30 minutes

Remarks: NONE

## 24. Aircraft Icing

by

R. Salmon, Capt.

No. of Copies

(one)

## Synopsis:

This seminar describes some of the flight hazards associated with aircraft icing, type of icing conditions, and methods of predicting icing conditions. References used in this seminar include AWS TR 167 and AWSM 105-39. Contains 15 vu-graph slides.

Period of Loan: 21 days

Presentation Time: 30 minutes

Remarks: NONE

## 25. Some Uses of the Skew T, Log P Diagram

by

D. Varley, Capt.

No. of Copies

(two)

## Synopsis:

This seminar describes some of the ways that the Skew T diagram can be used, such as the determination of stability, humidity, cloud bases/tops, and as an aid in locating frontal surfaces. All information is extracted from AWSM 105-124. Contains 14 vu-graph or 35mm slides and a script.

Period of Loan: 21 days

Presentation Time: 1 hour

Remarks: NONE

March 1970

USAF ETAC TN 70-3

26. Project COLD COWL - FY 1969  
by  
11 Wea Sq

No. of Copies  
(one)

Synopsis:

Project COLD COWL was initiated in the winter of 1967-68 at the request of the Alaskan Air Command in order to expedite the flow of aircraft through Elmendorf AFB. This seminar describes the operations and results of the FY69 season illustrated with 45 excellent 35mm slides.

Period of Loan: 21 days

Presentation Time (approx): 1 hour

Remarks: NONE

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27. The following seminars originated by other AWS units are also in the Wing files and available for loan:

- a. Thunderstorm Reindoctrination Briefing (3WW)
- b. Vorticity (5WW #2)
- c. Cloud and Precipitation Forecasting with the SLYH Method (7WW #1)
- d. Prediction of Snow versus Rain (7WW #2)
- e. Weather Radar (7WW #4)
- f. Forecasting Severe Thunderstorms (7WW #6)
- g. Operation of the Military Weather Warning Center (7WW #8)
- h. Hurricane Briefing Kit (7WW #11)
- i. Low Level Jet Stream (7WW #16)

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5TH WEATHER WING  
LANGLEY AFB, VIRGINIA  
23365

1. Clear Air Turbulence  
(no author given)

No. of Copies  
(one)

March 1970

## Synopsis:

This seminar contains an updated script with 20 slides, and supporting articles by Lt Colonel H. Robertson and Major C. G. Thompson.

Period of Loan: 30 days

Presentation Time (approx): 50 minutes

Remarks: All AWS wings were furnished a copy of this kit.

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2. Vorticity  
(no author given)

No. of Copies

(one)

## Synopsis:

This seminar discusses the vorticity principle in simple terms and illustrates some applications in weather forecasting. Kit contains an updated script outline with 9 35mm slides, a paper by Lt Colonel H. Robertson, and copies of vorticity articles from the AWS Scientific Services Review.

Period of Loan: 30 days

Presentation Time (approx): 50 minutes

Remarks: All AWS wings were furnished a copy of this kit.

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3. The following seminars originated by other AWS units are also in the Wing files and available for loan:

- a. Major Terrain Features of Europe (2WW #1)
- b. Vorticity Applications Reference Kit (2WW #2)
- c. The Role of Computers in Meteorology (2WW #4)
- d. The Sun and Solar Activity (2WW #5)
- e. Thunderstorm Reindoctrination Briefing (3WW)
- f. Jet Aircraft Characteristics (3WW #1)
- g. Cirrus Clouds (3WW #2)
- h. Wind-Shear Turbulence (3WW #3)
- i. Meteorological Analysis (3WW #4)

- j. Snow Forecasting Procedures Reference Kit (4WW)
- k. Weather Control and Modification (4WW #2)
- l. A Simplified Discussion of Vorticity (4WW #3)
- m. A Practical Procedure for Forecasting Cloud Cover and Precipitation (4WW #5)
- n. Chart Integration in the 24-Hour Forecast (4WW #7)
- o. Atlantic Hurricanes (4WW #8)
- p. Coastal Stratus and Fog (4WW #9)
- q. Lee Waves in the Atmosphere (4WW #13)
- r. Appraisal and Modification of NMC Prognostic Charts (4WW #14)
- s. Techniques for the Use of Vorticity Charts in Terminal Forecasting (4WW #21)
- t. The Use of Trajectories in Terminal Forecasting, by AWVDC (4WW #22)
- u. Meteorological Satellites (6WW #1)
- v. Altimetry, Pressure Altitude and Density Altitude (7WW)
- w. Current Status of Weather Modification (7WW)
- x. Fundamentals of the Pressure Altimeter (7WW)
- y. Use of Centralized Products (7WW)
- z. Prediction of Snow vs Rain (7WW #2)
- aa. Characteristics of Jet Stream Flow in Middle Latitudes (7WW #3)
- bb. Weather Radar (7WW #4)
- cc. Thunderstorms (7WW #5)
- dd. Forecasting Severe Thunderstorms (7WW #6)
- ee. Weather and Helicopter Operations (7WW #7)
- ff. Operation of the Military Weather Warning Center (7WW #8)



gg. Tornadoes (7WW #9)

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6TH WEATHER WING  
ANDREWS AFB, WASHINGTON, D. C.  
20331

|   | <u>No. of Copies</u> |
|---|----------------------|
| 1. Meteorological Satellites<br>(no author given) | one                  |

## Synopsis:

Covers existing and planned weather satellites including preparation and use of data for operational purposes. Photographs of various types of cloud patterns and land features from TIROS satellites are included. Includes 38 35mm slides.

Period of Loan: 30 days

Presentation Time (approx): 50 minutes

Remarks: NONE

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2. The following seminars originated by other AWS units are also in the Wing files and available for loan:
- a. The Use of Trajectories in Terminal Forecasting (4WW #22)
  - b. Clear Air Turbulence (5WW #1)
  - c. Application of the Barotropic Vorticity Prognostic Field to the Surface Forecast Problem (5WW #2)
  - d. Forecasting Thunderstorms (7WW #6)
  - e. Operation of the Military Weather Warning Center (7WW #8)
- 

7TH WEATHER WING  
SCOTT AFB, ILLINOIS  
62225

|  | <u>No. of Copies</u> |
|--|----------------------|
| 1. Cloud and Precipitation Forecasting with<br>the SLYH Method<br>by<br>Max Peek, Capt. (1966) | three                |

March 1970

USAF ETAC TN 70-3

Synopsis:

This method is an operational machine product at NMC and is used routinely as guidance for quantitative cloud and precipitation forecasting. This technique involves a current 850 mb chart, precipitable water analysis, and a 1000-500 mb thickness analysis, plus a 1000-500 mb thickness prognosis. Includes 14 35mm slides to help explain the procedures used.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|                                   |                      |
|-----------------------------------|----------------------|
| 2. Prediction of Snow versus Rain | <u>No. of Copies</u> |
| by                                |                      |
| Donald Seay, CMSgt (updated 1969) | four                 |

Synopsis:

A method of using a "critical" 1000-500 mb thickness value and 850 mb data to determine precipitation type. The type of precipitation that reaches the ground in a borderline situation is discussed. Includes 16 35mm slides.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|                                       |                      |
|---------------------------------------|----------------------|
| 3. Characteristics of Jet Stream Flow | <u>No. of Copies</u> |
| in Middle Latitudes                   |                      |
| by                                    |                      |
| Max Peek, Capt. (1966)                | four                 |

Synopsis:

A presentation of the vertical structure, horizontal structure, wind speeds, and turbulence of the jet stream. Weather and its relationship to jets is also discussed. Includes 13 35mm slides.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

March 1970

|                           |                      |
|---------------------------|----------------------|
| 4. Weather Radar          | <u>No. of Copies</u> |
| by                        |                      |
| Donald Seay, CMSgt (1965) | two                  |

## Synopsis:

A comprehensive discussion of radar fundamentals and their limitations. The transmitter, receiver, antenna, noise, target and indicator are discussed. Emphasis is placed on the radar beam characteristics, i.e., pulse length, beam width, beam resolution, etc., and radar propagation. Includes 28 35mm slides.

Period of Loan: 30 days

Presentation Time (approx): 50 minutes

Remarks: NONE

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|                                    |                      |
|------------------------------------|----------------------|
| 5. Thunderstorms                   | <u>No. of Copies</u> |
| by                                 |                      |
| Norman J. Clark, Jr., Major (1966) | three                |

## Synopsis:

A presentation of thunderstorm models since 1894 with the latest up-to-date models. Cloud heights, convection theories, squall line generations, and radar observations are discussed. Emphasis is placed on hailstorm characteristics which includes hail growth, cloud tops versus hail, and wind profiles versus hail. Includes 17 35mm slides.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|                                     |                      |
|-------------------------------------|----------------------|
| 6. Forecasting Severe Thunderstorms | <u>No. of Copies</u> |
| by                                  |                      |
| Norman J. Clark, Jr., Major (1966)  | four                 |

## Synopsis:

A discussion of some of the techniques in use at NWWC, Kansas City, and of parameters used successfully in semi-objective methods at various locations. Includes 27 35mm slides.

Period of Loan: 30 days

March 1970

USAF ETAC TN 70-3

Presentation Time (approx): 45 minutes

Remarks: NONE

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|                                      |                      |
|--------------------------------------|----------------------|
| 7. Weather and Helicopter Operations | <u>No. of Copies</u> |
| by<br>Donald N. Seay, CMSgt (1966)   | three                |

Synopsis:

A comprehensive discussion of the effects of density altitude, winds, turbulence, icing, and precipitation on helicopter flying, plus a discussion of helicopter aerodynamics as related to air density, blade velocity, etc. Includes 18 35mm slides.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|  |                      |
|--|----------------------|
| 8. Operation of the Military Weather Warning Center (MWWC) | <u>No. of Copies</u> |
| by<br>William H. Staten, Colonel (revised 1969)            | six                  |

Synopsis:

The mission of the MWWC is discussed with its relationship with ESSA's National Severe Storms Forecast Center. The description and use of each product is given with a broad view of how the warnings are formulated. A philosophy of interpreting MWWC's verification results is presented. Includes 14 35mm slides.

Period of Loan: 30 days

Presentation Time (approx): 40 minutes

Remarks: NONE

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|                                  |                      |
|----------------------------------|----------------------|
| 9. Tornadoes                     | <u>No. of Copies</u> |
| by<br>John M. Huck, Capt. (1968) | eight                |

Synopsis:

The basic characteristics of tornadoes are discussed. By using an example, the forecasting techniques employed by the MWWC at Kansas City, Missouri are explained. AWS

TR 200 is used as the basic reference for this discussion. A 35-minute taped narrative and 34 35mm slides are included.

Period of Loan: 30 days

Presentation Time (approx): 35 minutes

Remarks: NONE

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|                                     |                      |
|-------------------------------------|----------------------|
| 10. Use of AIREPs in Preparing CFPs | <u>No. of Copies</u> |
| by                                  |                      |
| Bryan G. Falzgraf (1967)            | ten                  |

Synopsis:

The role AIREPs play in improving Computer Flight Plans (CFPs) is described. The time sequence of events illustrating how AIREPs are used in revising the NMC analysis and progs and in MET Watching CFPs is given. This topic is suitable both for forecaster seminars and especially for indoctrinating aircrews of the need of timely and accurate AIREPs. Fifteen (15) slides are included.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|                            |                      |
|----------------------------|----------------------|
| 11. Hurricane Briefing Kit | <u>No. of Copies</u> |
| Unknown (1968)             | eight                |

Synopsis:

This topic, which was originally prepared by 5 Wea Wg, is intended to be given by staff weather officers to supported commands. It contains comprehensive climatic information on Atlantic Hurricanes, including the Gulf of Mexico and the Caribbean Sea. Twelve (12) slides are included.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

March 1970

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|  |                      |
|--|----------------------|
| 12. Spring Climo Briefing Kit          | <u>No. of Copies</u> |
| by<br>Raymond H. Schulte, CMSgt (1969) | eight                |

Synopsis:

Climatic charts for the contiguous United States for March, April, and May are provided for various parameters. No narrative is included. Twenty-five (25) 35mm slides are included.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|  |                      |
|--|----------------------|
| 13. Summer Climo Briefing Kit          | <u>No. of Copies</u> |
| by<br>Raymond H. Schulte, CMSgt (1969) | eight                |

Synopsis:

Climatic charts for the contiguous United States for June, July, and August are provided for various parameters. No narrative is included. Twenty (20) 35mm slides are included.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|  |                      |
|--|----------------------|
| 14. Fall Climo Briefing Kit            | <u>No. of Copies</u> |
| by<br>Raymond H. Schulte, CMSgt (1969) | six                  |

Synopsis:

Climatic charts for the contiguous United States for September, October, and November are provided for various parameters. No narrative is included. Twenty-seven (27) 35mm slides are included.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

|  |                      |
|--|----------------------|
| 15. Winter Climo Briefing Kit          | <u>No. of Copies</u> |
| by<br>Raymond H. Schulte, CMSgt (1968) | seven                |

## Synopsis:

Climatic charts for the contiguous United States for December, January, and February are provided for various parameters. No narrative is included. Twenty (20) 35mm slides are included.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|  |                      |
|--|----------------------|
| 16. Low Level Jet Stream               | <u>No. of Copies</u> |
| by<br>Raymond H. Schulte, CMSgt (1969) | six                  |

## Synopsis:

This topic contains a discussion of an early study and climatology of the southerly low level jet. A detailed narrative on the mechanics and effects produced by the low level jet is included. Eighteen (18) 35mm slides are included.

Period of Loan: 30 days

Presentation Time (approx): 1 hour

Remarks: NONE

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|   |                      |
|---|----------------------|
| 17. The NMC Primitive Equation (P.E.) Model | <u>No. of Copies</u> |
| by<br>John M. Huck, Capt. (1969)            | three                |

## Synopsis:

A general discussion of numerical weather prediction is given. The P.E. model used at NMC is discussed in non-mathematical detail. No manipulation of equations is attempted. Twenty (20) 35mm slides are included.

Period of Loan: 30 days

Presentation Time (approx): 1 hour

Remarks: NONE

March 1970

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|                       |                      |
|-----------------------|----------------------|
| 18. Thunderstorms     | <u>No. of Copies</u> |
| by                    |                      |
| SMSgt Gauthier (1968) | ten                  |

Synopsis:

A presentation of the rules for observing a thunderstorm and the mandatory entries on AWS Form 10. Included also are associated phenomena such as tornadoes, waterspouts, and funnel clouds; their identification and mandatory AWS Form 10 entries.

Period of Loan: 30 days

Presentation Time (approx): 1 hour

Remarks: NONE

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|                           |                      |
|---------------------------|----------------------|
| 19. Obstruction to Vision | <u>No. of Copies</u> |
| by                        |                      |
| SMSgt Montgomery (1968)   | ten                  |

Synopsis:

Definitions and identification of all types of obstructions to vision. Mandatory entries on AWS Form 10 and conditions which produce obstructions to vision.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE

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|                       |                      |
|-----------------------|----------------------|
| 20. Precipitation     | <u>No. of Copies</u> |
| by                    |                      |
| SMSgt Gauthier (1968) | ten                  |

Synopsis:

Definition and identification of all types of precipitation. Included also are character of and types of precipitation and methods of determining intensity.

Period of Loan: 30 days

Presentation Time (approx): 45 minutes

Remarks: NONE



March 1970

21. RVR (Runway Visual Range)

No. of Copies

by  
CMSgt Edward Nemetz (Oct 1968)

ten

Synopsis:

This seminar presents the definition of RVR and how RVR is obtained. The main portion of the seminar is taken up with the actual reporting of RVR/RVRM.

Period of Loan: 30 days

Presentation Time (approx): 1 hour

Remarks: NONE

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22. The following seminars originated by other AWS units are also in the Wing files and available for loan:

- a. Thunderstorm Reindoctrination Briefing (3WW)
  - b. Vorticity Applications, by USWB Western Region (4WW #13)
-

UNCLASSIFIED

Security Classification

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| 13. ABSTRACT   |  |   |  |
| <p>This Technical Note furnishes a complete listing of the prepared technical seminars at AWS wing headquarters which are available for loan to all AWS units for local presentation. The listing includes the seminar subject, author (where available), number of copies available, period of loan, approximate presentation time, type of illustrative material, and a brief synopsis of the seminar material. The information is based on an annual report from AWS wings.</p> |  |   |  |

UNCLASSIFIED

Security Classification

| 14. KEY WORDS                   | LINK A |    | LINK B |    | LINK C |    |
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|                                 | ROLE   | WT | ROLE   | WT | ROLE   | WT |
| Seminars<br>Training, technical |        |    |        |    |        |    |

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March 1970

USAF ETAC TN 70-3

LIST OF USAF ETAC TECHNICAL NOTES

| <u>Number</u> | <u>Title</u>   | <u>Date</u> |
|---------------|--|-------------|
| 68-1          | Superseded   |             |
| 68-2          | Meteorological Rocket Data and Predicting the Onset of the Southwest Monsoon over India and Southeast Asia (AD 669364) | May 68      |
| 68-3          | Bibliographies of Climatic References and Climatic Maps for Selected Countries (AD 672769)                             | Jul 68      |
| 68-4          | Climatological Bibliography of the South Atlantic Ocean Area including Certain Coastal Countries (AD 683761)           | Nov 68      |
| 69-1          | Selected Climatological Bibliography for Thailand (AD 685716)  | Mar 69      |
| 69-2          | Superseded   |             |
| 69-3          | An Annotated Climatological Bibliography of Romania (AD 688259)  | May 69      |
| 69-4          | Radar-Computed Rainfall Compared with Observations from a Dense Network of Rain Gauges (AD 688434)                     | Jun 69      |
| 69-5          | Tractionability Study for Laotian Panhandle (AD 691006)  | Jul 69      |
| 69-6          | An Annotated Climatological Bibliography of India (AD 691432)  | Aug 69      |
| 69-7          | A Selected Bibliography on the Climate of the Central American Countries (AD 695482)                                   | Sep 69      |
| 69-8          | A Selected Annotated Bibliography on Lightning (1964-1969) (AD 697020)   | Nov 69      |
| 69-9          | Rain Models for Landing Guidance Systems (AD 696617)   | Nov 69      |
| 70-1          | A Selected Annotated Bibliography on Clear Air Turbulence (CAT, 1964-1969) (AD 700057)                                 | Jan 70      |
| 70-2          | An Annotated Climatological Bibliography of the BENELUX Countries (1960-1969) (AD )                                    | Feb 70      |
| 70-3          | Listing of Available Seminars (AWS Wings), (AD )   | Mar 70      |